




# Chapter 1

## Nuclear Deterrence – U.S. Policy and Strategy

### 1.1 Overview

The U.S. nuclear deterrent, with its unique attributes, is a central element of U.S. national security policy. First, the U.S. nuclear deterrent reduces the probability a nuclear peer or nuclear-armed adversary might engage the United States in a strategic nuclear exchange. Second, U.S. nuclear forces provide a nuclear “umbrella” of protection for many allied nations, reducing their need to develop and field their own nuclear weapons, thereby helping to dissuade nuclear proliferation. Third, the U.S. nuclear arsenal deters nuclear or radiological attack against the United States, its allies, and partners by state-sponsored terrorist organizations or proliferant nations. The U.S. nuclear weapons programs also provide the scientific, technological, and engineering foundation for the U.S. nuclear counterterrorism and counterproliferation programs. For these reasons, it is the policy of the United States to retain and maintain its nuclear deterrent indefinitely until verifiable worldwide nuclear disarmament is achieved.

Integral to U.S. nuclear deterrence policy is the United States' commitment to strengthen bilateral and regional security. The United States continues the forward deployment of U.S.



*“The nuclear forces continue to be crucial for preventing attack with weapons of mass destruction on the United States, its allies, its bases overseas, and its interests. And, as long as those nuclear forces are there, they are used every day, they are not forces on which we spend large amounts of money and never are used.”*

*Dr. James R. Schlesinger,  
2010 Strategic Deterrence  
Symposium, August 11, 2010*

forces in key regions, strengthens U.S. and allied non-nuclear capabilities, and provides extended deterrence in order to deter potential threats. This demonstrates to neighboring states that the pursuit of nuclear weapons will only undermine their goal of achieving military or political advantages and reassures non-nuclear U.S. allies and partners their security interests can be protected without their own nuclear deterrent capabilities. Security architectures in key regions will retain a nuclear dimension as long as nuclear threats to U.S. allies

and partners remain. The United States will continue to be able to extend its nuclear umbrella through forward deployable fighters and bombers as well as through other U.S. strategic nuclear systems. The United States plans to retain the capability to forward deploy U.S. nuclear weapons on tactical fighters and heavy bombers which would involve a life extension of the B61 bomb.

## 1.2 U.S. Nuclear Strategy

The *Quadrennial Defense Review* (QDR) is a legislatively-mandated review of Department of Defense (DoD) strategy and priorities and sets the long-term course for the DoD as it assesses the threats and challenges the Nation faces and re-balances DoD strategies, capabilities, and forces to address today's conflicts and tomorrow's threats. The 2014 QDR states that the number one priority of the DoD is to “maintain a secure and effective nuclear deterrent” and, as U.S. nuclear forces are reduced through negotiated agreements with Russia, the importance of ensuring its remaining forces are safe, secure, and effective increases. Thus, the DoD, in collaboration with the Department of Energy (DOE), continues to invest in modernizing its essential nuclear delivery systems, warheads, warning, command and control, and nuclear weapons infrastructure. These

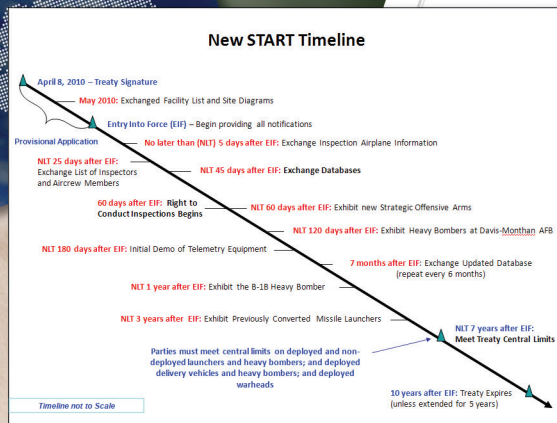
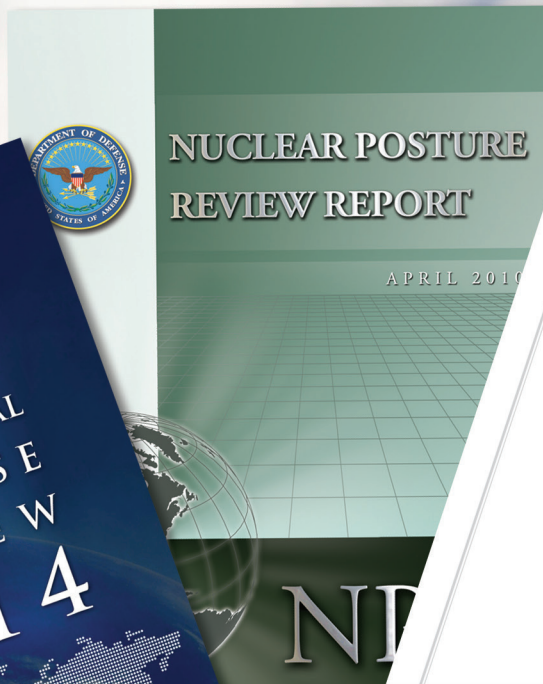
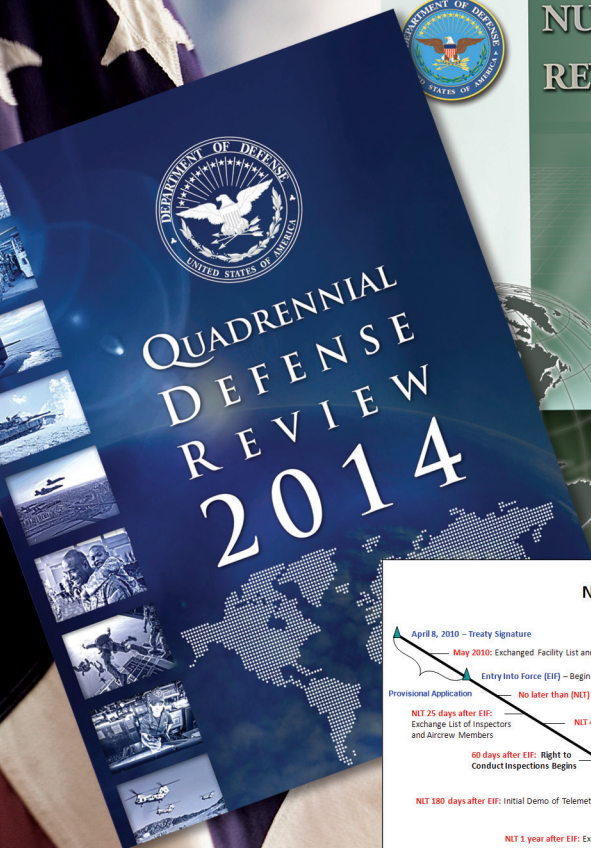
programs will ensure the United States retains an effective triad of strategic nuclear delivery systems (strategic bombers, intercontinental ballistic missiles, and submarine-launched ballistic missiles) and forward deployable tactical aircraft capable of delivering nuclear weapons.

The fundamental role of U.S. nuclear forces is to deter nuclear attack on the United States as well as its allies and partners. The United States continues to reduce the role of nuclear weapons in deterring non-nuclear attack. However, nuclear forces continue to play a limited but critical role in the Nation's strategy to address threats posed by states that possess nuclear weapons and states not in compliance with their nuclear nonproliferation obligations. Against such potential adversaries, our nuclear forces deter strategic attack on the homeland and provide the means for effective responses, should deterrence fail. Our nuclear forces contribute to deterring aggression against U.S. and allied interests in multiple regions, assuring U.S. allies its extended deterrence guarantees are credible, and demonstrating we can defeat or counter aggression if deterrence fails. U.S. nuclear forces also help convince potential adversaries they cannot successfully escalate their way out of failed conventional aggression against the United States or its allies and partners.

The *U.S. National Security Strategy* of February 2015 states the United States will protect investment in foundational capabilities, like the nuclear deterrent. Furthermore, it states no threat poses as grave a danger to our security and well-being as the potential use of nuclear weapons and materials by irresponsible states or terrorists. Therefore, while we seek the peace and security of a world without nuclear weapons, as long as they exist, the United States must invest the resources necessary to maintain, without underground nuclear testing, a safe, secure, and effective nuclear deterrent that preserves strategic stability.

### 1.3 International Security Environment

The United States is faced with a new security environment that has changed dramatically since the end of the Cold War. While the threat of global nuclear war has become remote, the risk of nuclear attack has increased. Immediate and extreme dangers for the United States are dual threats of nuclear proliferation and nuclear terrorism. Additional countries, especially those who do not conform to international norms and structures, may acquire or seek to acquire nuclear weapons. Sub-state actors and terrorist organizations have



also declared their intent to acquire nuclear threat devices.<sup>1</sup> Russia remains America's peer in the area of significant nuclear weapons capabilities and continues to modernize its still-formidable nuclear forces. This is while policy differences continue to arise with the United States and Russia as well as between Russia and its regional neighbors.

The United States and China increasingly share responsibilities for addressing global security threats, including weapons of mass destruction (WMD) proliferation and terrorism. At the same time, the United States and China's Asian neighbors remain concerned about the pace and scope of China's current military modernization efforts, including the qualitative modernization of its nuclear forces. China's nuclear arsenal remains much smaller than the arsenals of Russia and the United States. However, the lack of transparency surrounding China's nuclear programs and the strategy and doctrine guiding them raise questions about China's future strategic intentions.

## 1.4 Nuclear Posture Review

The 2010 *Nuclear Posture Review* (NPR) is the third comprehensive review of U.S. nuclear policies and posture; the first two conducted in 1994 and 2001 by the Clinton and Bush Administrations, respectively. The 2010 review was an interagency effort conducted by the DoD in close consultation with the Departments of Energy and State and in direct engagement with the President. The NPR focused on five key objectives on the United States' nuclear agenda: 1) preventing nuclear proliferation and nuclear terrorism; 2) reducing the role of nuclear weapons; 3) maintaining strategic deterrence and stability at reduced nuclear force levels; 4) strengthening regional deterrence and reassuring U.S. allies and partners; and 5) sustaining a safe, secure, and effective nuclear arsenal.

*The 2010 Nuclear Posture Review calls for reducing nuclear dangers and pursuing the long-term goal of a world without nuclear weapons....while maintaining a safe, secure, and effective nuclear arsenal.*

Since the end of the Cold War, the United States has sought to reduce the role of nuclear weapons in deterring non-nuclear attacks on itself and its allies and partners. The United

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<sup>1</sup> Nuclear threat devices include improvised nuclear devices (INDs), radiological dispersal devices (RDDs), radiological exposure devices (REDs), and any device that may produce nuclear yield, such as nuclear weapons that have fallen out of state control.



States is continuing to strengthen conventional military capabilities, missile defenses, and counter-WMD capabilities so the role of U.S. nuclear weapons in deterring non-nuclear attacks (conventional, biological, or chemical) can continue to be reduced while strengthening deterrence. The NPR also explains changes in U.S. declaratory policy to include the strengthening of negative security assurances. Specifically, the United States declares that we will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the *Treaty on the Nonproliferation of Nuclear Weapons* (NPT) and in compliance with their nuclear nonproliferation obligations.

## 1.5 Maintaining Strategic Deterrence and Stability at Reduced Nuclear Force Levels

The *Treaty between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms*, also known as New START, was signed on April 8, 2010, entered into force on February 5, 2011, and is expected to stay in force at least until 2021. New START sets the course for the United States' nuclear deterrent of the future. New START replaced the *Strategic Offensive Reductions Treaty* (SORT), commonly referred to as the Treaty of Moscow, which was due to expire in December 2012. In terms of name, it is a follow-up to the *Strategic Arms Reduction Treaty* (START) I, which expired in December 2009, the proposed START II, which never entered into force, and START III, in which negotiations were never concluded. Under the terms of New START, the United States and Russia agreed to limits of 1,550 accountable strategic warheads, 700 deployed strategic delivery vehicles, and a combined limit of 800 deployed and non-deployed strategic delivery vehicles. Under New START, the United States retains a nuclear triad. New START does not constrain U.S. missile defenses and allows the United States to pursue conventional global strike systems.

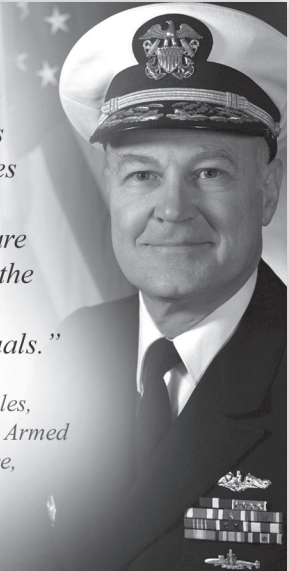
## 1.6 Nuclear Weapons Employment Policy

The primary purpose of the U.S. nuclear deterrent is to deter a nuclear attack against the United States, its allies, or its interests. If deterrence were to fail, the United States could employ its nuclear forces. The decision to employ nuclear weapons, at any level, requires the explicit authorization of the President of the United States. The use of nuclear weapons represents a significant escalation in conflict and involves many considerations. Other prominent planning and employment factors include the strategic security situation, the type and extent of operations to be conducted, military effectiveness, damage-

limitation measures, environmental and ecological impacts, termination objectives, and calculations concerning how such considerations may interact.

## 1.7 Nuclear Weapons Employment Planning

Defense planning for the employment of nuclear weapons is consistent with national policy and strategic guidance. Planning for the use of nuclear weapons is based upon knowledge of enemy force strength and disposition; the number, yields, and types of nuclear weapons available; and the status and disposition of friendly forces at the time these weapons are to be employed. Employment planning considers the characteristics and limitations of the nuclear forces available and seeks to optimize both the survivability and combat effectiveness of these forces. To provide the desired capabilities, nuclear forces must be diverse, flexible, effective, survivable, enduring, and responsive. If no one weapons system possesses all of the desired characteristics, a variety of systems may be necessary. Strategic stability and centralized control, as well as command, control, communications, computers, and intelligence (C4I), are required enablers in nuclear force planning and employment.

A black and white portrait of Admiral Henry G. Chiles, a man in a naval officer's uniform with a white cap and medals on his chest. He is smiling slightly and looking towards the camera. The background is a faded American flag.

*“The caliber of people  
in the armed forces  
ultimately determines  
our ability to deter.  
Deterrence theories are  
only visions without the  
hard work of many  
dedicated individuals.”*

*Admiral Henry G. Chiles,  
Statement to Senate Armed  
Services Committee,  
April 20, 1994*

## 1.8 Nuclear Weapons Targeting Policy

Targeting is the process of selecting targets and matching the appropriate weapon to those targets by taking account of national objectives and operational requirements and capabilities. Targeting includes the analysis of enemy situations relative to the military mission, objectives, and capabilities, as well as the identification and nomination of specific vulnerabilities that, if exploited, would accomplish the military goals through delaying, disrupting, disabling, or destroying critical enemy forces or resources.

Nuclear targeting considerations include the inability of friendly forces to destroy targets using conventional or other means; the number and type of individual targets; the vulnerability of those targets, including target defenses; the level of damage required for each target to achieve the overall objective; optimum timing; the adversary's ability to reconstitute or regenerate; avoidance of collateral damage; and environmental conditions in the target vicinity including surface, upper air, and space conditions. **Figure 1.1** illustrates the nuclear targeting process and assessment which is further described in *Appendix C: Basic Nuclear Physics and Weapons Effects*.

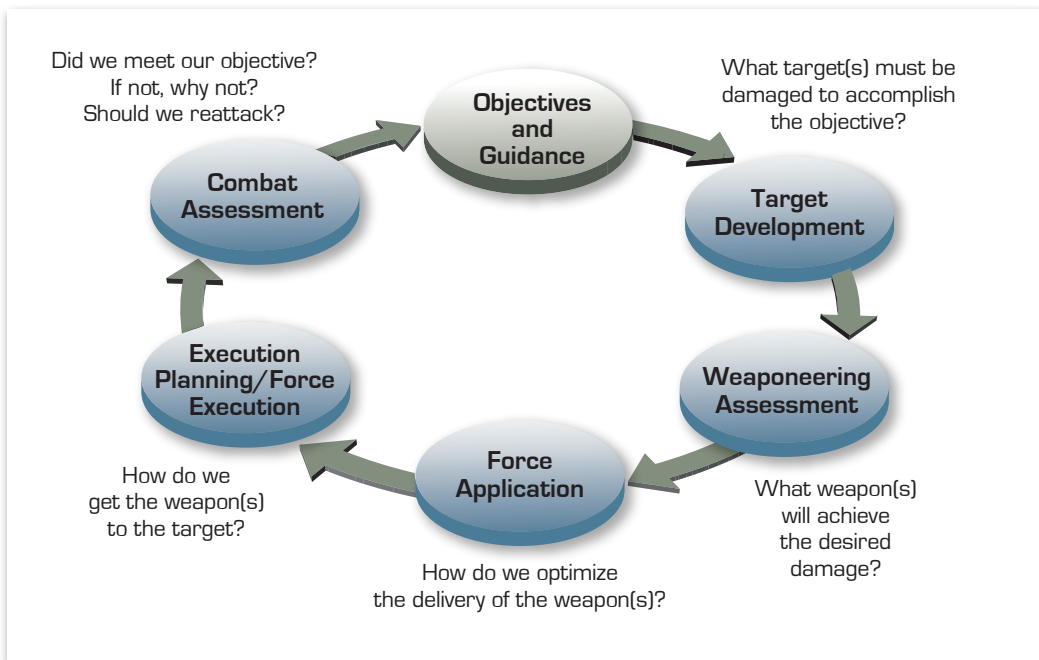


Figure 1.1 Nuclear Targeting Cycle